Electronic Supplementary Material (ESM)

to Tomaz et al.: Water Use and Productivity of Maize-based Cropping Systems in the Alqueva Region (Portugal)

Cereal Res. Commun. DOI: 10.1556/0806.45.2017.036

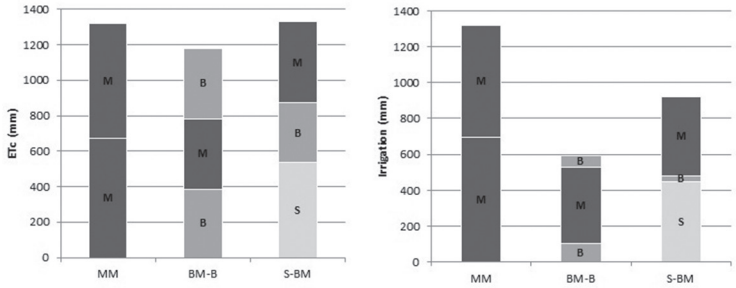

Figure S1. Seasonal water requirements and irrigation supplies of each crop in each cropping system. MM – maize monoculture; BM-B – rotation barley+maize-barley; S-BM – rotation sunflower-barley+maize

Table S1. Crop phenology

Cropping system	Crop (year)	Phenological stage	DOY	Crop (year)	Phenological stage	DOY	Crop (year)	Phenological stage	DOY
MM	Maize (2013)	Sowing	125	Maize (2014)	Sowing	118			
		8-Leaf stage	166		8-Leaf stage	157			
		Silking	215		Silking	192			
		Milk stage	244		Milk stage	217			
		Physiological maturity	272		Physiological maturity	256			
		Harvest	288		Harvest	293			
BM-B	Barley (2013)	Sowing	362	Maize (2013)	Sowing	190	Barley (2014)	Sowing	354
		Tillering	45		8-Leaf stage	223		Tillering	25
		Booting	104		Silking	251		Booting	85
		Ear emergence	150		Milk stage	272		Ear emergence	102
		Ripening/Harvest	171		Physiological maturity	307		Ripening/Harvest	153
					Harvest	329			
S-BM	Sunflower (2013)	Sowing	113	Barley (2014)	Sowing	336	Maize (2014)	Sowing	172
		Initial flowering	177		Tillering	5		8-Leaf stage	214
		Final flowering	188		Booting	69		Silking	243
		Physiological maturity	258		Ear emergence	91		Milk stage	262
		Harvest	268		Ripening	145		Physiological maturity	293
					Harvest	162		Harvest	351

MM – maize monoculture; BM-B – rotation barley+maize-barley; S-BM – rotation sunflower-barley+maize.

Table S2. Effect of year and of cropping system on maize grain yield, water productivity (WP) and irrigation water productivity (IRRWP)

Variation source	Grain yield (kg/ha)	WP (kg/m^3)	IRRWP (kg/m^3)
Year	N.s.	N.s.	N.s.
2013	12850	2.45	2.35
2014	10685	1.80	1.85
Cropping system	N.s.	N.s.	N.s.
MNC	16000	2.40	2.45
RAB	7535	1.85	1.75
Interaction	N.s.	N.s.	N.s.

N.s. – no significance at $p<0.05$; MNC – maize in monoculture; RAB – maize in rotation after barley.